I. SCOPE OF WORK

An ad hoc committee of the National Academies of Sciences, Engineering, and Medicine will consider frameworks for integrating, documenting, and evaluating scientific evidence to assess causality of health and welfare effects by air pollutants as part of National Ambient Air Quality Standards (NAAQS) reviews conducted by the Environmental Protection Agency (EPA). The committee will

- Describe and assess available methods and frameworks for inferring causality of health or welfare effects within a NAAQS review. Based on those assessments, suggest how the number and description of causality categories in the hierarchy to classify the weight of evidence for causation (i.e., causal determinations) might be refined for more effective use in EPA's Integrated Science Assessments (ISAs) that are prepared for NAAQS reviews. Indicate if those categories are necessarily mutually exclusive in making causal determinations from a body of evidence, and, if appropriate, identify methods to characterize the degree of confidence in a causal determination.
- Assess new advances for integrating and evaluating scientific evidence to inform causal determinations critical to EPA's NAAQS reviews. Suggest emerging tools and approaches that might be used in the near and longer-term to integrate and synthesize evidence across studies and scientific disciplines. In addition, consider whether those tools and approaches might be used to assess consistency among independent studies within a discipline, coherence across different lines of evidence, and evidence of biological plausibility.
- Identify additional issues concerning potential confounders (i.e., other factors associated with both the pollutant and effect) that EPA might consider when assessing causality for an individual criteria pollutant that is part of an atmospheric complex pollutant mixture.

The committee's report will describe, in the context of ISAs, the types and characteristics of evidence most useful for forming a causal determination, and whether a single framework and practices related to it for assessing causality may be applied to both health and welfare effects. The report will make recommendations related to the development and use of ISA frameworks for causal determinations and describe priority research needed to improve those frameworks in the future.

Completion of this task shall include a kick-off teleconference/webinar held in conjunction with EPA and development of a draft report including approaches evaluated, recommendations for frameworks and causal analyses for causal determinations, and priority research needs by a NASEM committee. NASEM shall coordinate informational gathering sessions during committee meetings to receive input from EPA, SMEs, and the public. The resulting report shall be subject to NASEM review procedures[HYPERLINK \l "_bookmark1"]and a consensus report shall be produced.

Once the report has gone through the review process and the National Academies has signed off on its release, an embargoed version of the report shall be released to the EPA Task Order Contracting Officer Representative (TOCOR) 10 business days prior to public release. The EPA TOCOR and other EPA staff will be briefed on the contents of the prepublication report by NASEM no less than 5 business days before releasing the report to the public. The prepublication is an uncorrected proof and subject to editorial changes. The EPA can request the correction of factual errors (e.g., correction in numerical values) via email through the TOCOR no less than 5 business days before public release of the prepublication. The National Academies will determine the final wording of the report.